

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-246645

(43)Date of publication of application : 06.09.1994

(51)Int.Cl.

B25B 23/18  
B23B 45/00  
B25F 5/00  
F21V 33/00

(21)Application number : 05-069045

(71)Applicant : YAMAZAKI KAZUO

(22)Date of filing : 18.02.1993

(72)Inventor : YAMAZAKI KAZUO

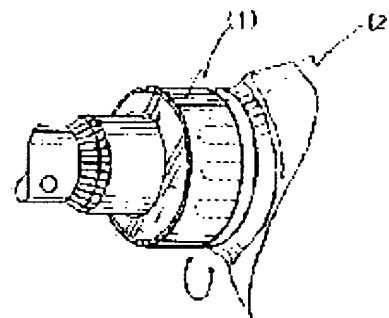
## (54) MULTI-POWER TOOL PLUS TIGHTENER

### (57)Abstract:

PURPOSE: To improve work safety and work efficiency by providing an illuminating lamp for illuminating an edge part of a tool integrally built in the power tool of an electric drill or the like.

CONSTITUTION: An illuminating means 1, in which many illuminating lamps are circular annularly arranged in the adjacent location, is arranged in a chuck part of an electric drill 2. In this way, a drilled part is effectively illuminated, to improve work safety and work efficiency.

The illuminating lamps may also be formed into a structure supported by a bracket means capable of mounting/ removing a tool main unit so that a tool edge point end part can be directly illuminated. Illuminance of the illuminating lamp may be capable of adjusting light by a changeover switch.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than  
the examiner's decision of rejection or  
application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

# MULTI-POWER TOOL PLUS TIGHTENER

---

## CLAIMS

---

[Claim(s)]

[Claim 1] Power tool with a built-in lighting lamp

---

## DETAILED DESCRIPTION

---

[Detailed Description of the Invention]

[0001]

[Field of the Invention] this application is related with the lighting lamp of a power tool.

[0002]

By the mechanical predominance, having become what can never be missed in any activities, the power tool of the [Description of the Prior Art] former did not yet have to equip the instrument for lighting, but had to ask others for the light in the dark place. However, the present condition is having not restricted a required light always having been obtained, but neither the \*\*\*\*\* activity loss nor the construction mistake having reached for saying, but having paid great risk also from the security side.

[0003]

[Problem(s) to be Solved by the Invention], therefore this application repeated research of lighting fitting which can be adapted for the unification with a tool other than necks, such as vibration, an impact, heat, etc. with which the power tool has held the most common drill in the model inner and externally, out of a number of power tool in consideration of the situation and social needs of a work site.

[0004]

The conclusion that [the means which invention makes solution \*\*\*\*\*], consequently long lasting \*\*\*\*\*-proof with which 5mm of diameters is not filled were the optimal as a lighting ball of a power tool was reached. This cheap and strong micro ball resulted in completion by making only lighting into plus \*\*, without spoiling the form which was excellent in the conventional power tool possible [ the best correspondence ] therefore to conditions and a demand with various this application.

[0005]

This proper light [ [Function] / "even if very small, the light which illuminates a hand certainly is kinder than the powerful light from overhead location" ] came to be obtained by one-touch.

[0006]

[Example] -- an example is described hereafter.

[ Drawing 1 ] The effectiveness was made effective when monocyte type: (drawing A) made a lighting lamp slide. By making lighting fitting into a simpler form, that what is necessary is just to establish the electrode hole of about 2-3mm of diameters of small in the body of a tool therefore, the cost concerning the amelioration is also the minimum, and (drawing B) was made more exact by making free the telescopic motion and the neck swing of the instrument. in addition, a dark place and the power source at the time of closing -- cutting -- forgetting -- etc. -- \*\* -- it considered as the check LGT for safe and management. [ build light emitting diode into a tool and ] [ Drawing 2 ] Without obtaining assistance of an adapter, when multi-ball type: (drawing C) increases the number of balls, power-source use of the body of a direct tool is attained, and it is much more convenient. moreover, adjustment of lighting -- the increase of a circuit changing switch -- the multiple-purpose lighting ring of [ drawing 3 ] (drawings D-F) enabled it to correspond to an activity at large [ various ] by - extinction being also possible, removing this lighting ring, and making it become independent For example, (drawing F), it is the operation by wearing of shown covering. The increase in efficiency of an activity and much more insurance are urged to red covering by carrying out proper use which said risk and yellow covering as step cautions, and said blue covering as the termination LGT. In addition, flashing in emergency and a siren are more effective. The micro ball of this application use can be adapted for the special feature of various power tools all fields as mentioned above.

[0007]

[The effect of the invention] "although ancient times and a change did not have the format of the construction which starts by \*\*\*\* for praying for the sum of those who are engaged in insurance and it in A.D. 2003 Youth laborers' figure was not found in the work site, but while the history of" tool by which the most was occupied by the elderly people of 60-70 years-old cost repeated amelioration and a design in the form which are human beings' antique background and close one, and responds to the social needs at a historical turning point turning point, it resulted current. The power tool of the 1993 former is eclipse \*\*\*\*\* with value so that it may be worshipped as what [ the convenience, i.e., what convenient and kind, ] of civilization within limits to which the comparison thinking with a hand instrument was always restricted. however, a time -- the above-mentioned -- profit -- historical -- a big turning point -- greeting -- utterly -- getting down -- all social systems -- not changing -- it is obliged. It is in it, and a power tool also follows the path of again in addition much more lightweight-izing, multi-functionalization, and high-power-izing, and will be promised by development of a sensor in the future when considerable insurance is near. Considering such a social situation, unification of a tool and lighting resulted in upper this application of recognition that it is the first priority, also from reduction of labor, power saving, and a safety aspect.

---

## TECHNICAL FIELD

---

[Field of the Invention] this application is related with the lighting lamp of a power tool.

---

## PRIOR ART

---

By the mechanical predominance, having become what can never be missed in any activities, the power tool of the [Description of the Prior Art] former did not yet have to equip the instrument for lighting, but had to ask others for the light in the dark place. However, the present condition is having not restricted a required light always having been obtained, but neither the \*\*\*\*\* activity loss nor the construction mistake having reached for saying, but having paid great risk also from the security side.

---

## EFFECT OF THE INVENTION

---

[The effect of the invention] "\*\*\*\* for praying for the sum of those who are engaged in insurance and it in A.D. 2003 Although ancient times and a change did not have the format of the starting construction, youth laborers' figure was not found in the work site, but while the history of" tool by which the most was occupied by the elderly people of 60-70 years-old cost repeated amelioration and a design in the form which are human beings' antique background and close one, and responds to the social needs at a historical turning point turning point, it resulted current. The power tool of the 1993 former is eclipse \*\*\*\*\* with value so that it may be worshipped as what [ the convenience, i.e., what convenient and kind, ] of civilization within limits to which the comparison thinking with a hand instrument was always restricted. however, a time -- the above-mentioned -- profit -- historical -- a big turning point -- greeting -- utterly -- getting down -- all social systems -- not changing -- it is obliged. It is in it, and a power tool also follows the path of again in addition much more lightweight-izing, multi-functionalization, and high-power-izing, and will be promised by development of a sensor in the future when considerable insurance is near. Considering such a social situation, unification of a tool and lighting resulted in upper this application of recognition that it is the first priority, also from reduction of labor, power saving, and a safety aspect.

---

## TECHNICAL PROBLEM

---

[Problem(s) to be Solved by the Invention], therefore this application repeated research of lighting fitting which can be adapted for the unification with a tool other than necks, such as vibration, an impact, heat, etc. with which the power tool has held the most common drill in the model inner and externally, out of a number of power tool in consideration of the situation and social needs of a work site.

---

## MEANS

---

The conclusion that [the means which invention makes solution \*\*\*\*\*], consequently long lasting \*\*\*\*-proof with which 5mm of diameters is not filled were the optimal as a lighting ball of a power tool was reached. This cheap and strong micro ball resulted in completion by making only lighting into plus \*\*, without spoiling the form which was excellent in the conventional power tool possible [ the best correspondence ] therefore to conditions and a demand with various this application.

---

## OPERATION

---

This proper light [ [Function] / "even if very small, the light which illuminates a hand certainly is kinder than the powerful light from overhead location" ] came to be obtained by one-touch.

---

## EXAMPLE

---

[Example] -- an example is described hereafter.

[ Drawing 1 ] The effectiveness was made effective when monocyte type: (drawing A) made a lighting lamp slide. By making lighting fitting into a simpler form, that what is necessary is just to establish the electrode hole of about 2-3mm of diameters of small in the body of a tool therefore, the cost concerning the amelioration is also the minimum, and (drawing B) was made more exact by making free the telescopic motion and the neck swing of the instrument. in addition, a dark place and the power source at the time of closing -- cutting -- forgetting -- etc. -- \*\* -- it considered as the check LGT for safe and management. [ build light emitting diode into a tool and ] [ Drawing 2 ] Without obtaining assistance of an adapter, when multi-ball type: (drawing C) increases the number

of balls, power-source use of the body of a direct tool is attained, and it is much more convenient. moreover, adjustment of lighting -- the increase of a circuit changing switch -- the multiple-purpose lighting ring of [ drawing 3 ] (drawings D-F) enabled it to correspond to an activity at large [ various ] by - extinction being also possible, removing this lighting ring, and making it become independent For example, (drawing F), it is the operation by wearing of shown covering. The increase in efficiency of an activity and much more insurance are urged to red covering by carrying out proper use which said risk and yellow covering as step cautions, and said blue covering as the termination LGT. In addition, flashing in emergency and a siren are more effective. The micro ball of this application use can be adapted for the special feature of various power tools all fields as mentioned above.

---

## DESCRIPTION OF DRAWINGS

---

[Brief Description of the Drawings]

[ Drawing 1 ] Drawing A is a sectional view of this application monocyte type.

(Drawing B) is a side elevation of other example monocyte type instruments.

[ Drawing 2 ] Drawing C is a \*\*\*\* Fig. of this application multi-ball type.

[ Drawing 3 ] Drawing D is a side elevation of other example multiple-purpose lighting rings. (Drawing E) is a front view of a multiple-purpose lighting ring.

(Drawing F) is a multiple-purpose lighting ring side elevation of covering wearing.

[Explanation of a sign]

(1) Lighting fitting

(2) Drill

(3) Multiple-purpose lighting ring

(4) Covering

---

## DRAWINGS

---

Drawing 1

